

REMARKS

Claims 1-21, 30 and 31 are pending in this application. Claims 1 and 31 have been amended to define still more clearly what Applicants regard as their invention, and claim 30 has been amended to clarify the language of the claim. Support for the amendments to claims 1 and 31 can be found, for example, in paragraphs 67-74 of the specification. No new matter has been added. Reconsideration of the application in light of the remarks, which follow, is respectfully requested.

Claim Rejections Under 35 U.S.C. §112

Claims 30 and 31 stand rejected under 35 U.S.C. § 112, first paragraph, for allegedly failing to comply with the written description requirement. In addition, claims 30 and 31 stand rejected under 35 U.S.C. § 112, second paragraph, for allegedly being indefinite. Applicant respectfully traverses these grounds for rejection for at least the following reasons.

The M.P.E.P. provides the following guidance for determining whether the claims meet the written description requirement of Section 112, first paragraph:

An objective standard for determining compliance with the written description requirement is, "does the description clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed." . . . Whenever the issue arises, the fundamental factual inquiry is whether a claim defines an invention that is clearly conveyed to those skilled in the art at the time the application was filed. The subject matter of the claim need not be described literally (i.e., using the same terms or in *haec verba*) in order for the disclosure to satisfy the description requirement.

M.P.E.P. § 2163.02 (quoting *In re Gosteli*, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989)(emphasis added)).

The Examiner states that the specification describes using “the same first elements,” but not “substantially similar” elements. (Office Action at page 2). However, the specification actually describes the use of “one or more appropriate sensors” (specification at paragraph 77) and notes that various embodiments of the sensor elements may be used, such as a sensor having a plurality of cutouts (specification at paragraph 78). Nothing in the specification requires the sensors to be “the same,” as the Examiner seems to suggest.

Nevertheless, to expedite matters, claim 30 has been amended to recite that the first tread elements are “substantially the same.” It is respectfully submitted that one of ordinary skill in the art would readily recognize that the present invention may include the use of sensor elements that are substantially the same. Accordingly, claim 30 is believed to meet the requirements of 35 U.S.C. § 112, first paragraph.

Regarding claim 31, the Examiner asserts that the originally-filed specification fails to provide support for “forming the second element such that it slides ‘substantially less’ than the first tread element.” (Office Action at pages 2 and 3).

Claim 31 recites that “the at least one second tread element being configured such that, at least within a range of rolling conditions to be monitored, said at least one second tread element slides substantially less over the ground than said at least one first tread element.” These features are described throughout the specification, for example at paragraphs 67-74, which describes tread blocks (e.g., 2) that are formed “according to the rules of the art of designing treads” (specification at paragraph 67), i.e.,

designed not to slide under normal operating conditions. The specification goes on to describe other tread blocks (e.g., measuring elements 1) that are designed such that "the central zone 10 of the measuring element 1 slides over the ground." (Specification at paragraph 69).

It is respectfully submitted that one of ordinary skill in the art would readily recognize that a tread element designed "according to the rules of the art of designing treads" would slide substantially less over the ground than an element designed to slide, under the range of rolling conditions to be monitored. Indeed, as noted in the Office Action, the specification states that in the non-measurement portions of the tread "only small parts slide over the ground, and these possibly sliding parts are far too small to provide an exploitable measurement for arriving at the friction potential." (specification at paragraph 69).

Further in this regard, the Examiner seems to have taken the position that the specification must literally state that the non-measurement treads slide "substantially less" than the measurement treads. However, as discussed in the excerpt from the M.P.E.P. presented above, compliance with the written description requirement is evaluated based on whether the claimed invention would be recognized by those of ordinary skill in the art, rather than the literal language of the specification.

Regarding the rejection of claim 31 under 35 U.S.C. § 112, second paragraph, the Examiner appears to have taken the position that the law requires the specification to define the term "substantially less," down to giving a specific percentage of the relative amount of sliding. However, it is well established that the specification is not the sole basis for determining the definiteness of claim language: "[d]efiniteness of claim

language must be analyzed, not in a vacuum, but in light of: (A) The content of the particular application disclosure; (B) The teachings of the prior art; and (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.” M.P.E.P. § 2173.02. Applicants respectfully submit that the term “substantially less” is sufficiently definite when considered in these contexts. For example, as discussed above, the specification states that, in the non-measurement portions of the tread, “only small parts slide over the ground, and these possibly sliding parts are far too small to provide an exploitable measurement for arriving at the friction potential.” (Specification at paragraph 69).

Likewise, with respect to the rejection of claim 30 under 35 U.S.C. § 112, second paragraph, Applicants respectfully submit that the meaning of the term “substantially the same” would be readily understood when considered in the content of the disclosure, teachings of the prior art, and the claim interpretation that would be given by one of ordinary skill in the art.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. § 112.

Claim Rejections Under 35 U.S.C. §102(b)

Claims 1-4, 6-10, 19, 20, 30, and 31 stand rejected under 35 U.S.C. § 102(b) as being anticipated by German Patent DE 3939917 (“German ‘917”). Applicants respectfully traverse this ground for rejection.

Claim 1

Claim 1 is directed to a tire whose tread comprises at least a first tread element and at least one second tread element. The first tread element is adapted for measuring at least a tangential force and is different than the second tread element. Each of the first and second tread elements have a contact surface that, during normal operation of a vehicle wheel equipped with the tire, comes into contact with the ground in a contact area on each revolution of the tire. The first tread element is configured such that, at least within a range of rolling conditions to be monitored, the contact surface thereof slides relative to the ground during its passage through the contact area. The second tread element is configured such that, at least within a range of rolling conditions to be monitored, the second tread element does not slide over the ground. The first tread element comprises means that constitute a sensor capable of making a measurement of a tangential force in the contact surface of the first tread element during its passage through the contact area. Notably, an estimate of a tangential force on the vehicle is obtainable based on the tangential force measured in the first tread element, without a measurement in the second tread element.

German '917

As previously noted in Applicants' Response dated October 19, 2004, German '917 relates to a tire having a plurality of measuring knobs to which a defined coefficient of friction is assigned by virtue of their geometric shape. The measuring knobs are capable of beginning to slide or slip at various different values of adherence on the road. A sensing element is provided to detect whether the measuring knobs are or are not

slipping/sliding and an evaluation unit is used to calculate the momentary friction between the tire and the rolling surface. It is apparent that German '917 requires measurements from multiple measuring knobs in order to make a friction measurement.

By contrast, claim 1 recites that an estimate of a tangential force on the vehicle is obtainable based on the tangential force measured in the first tread element, without a measurement in the second tread element. As noted above, German '917 requires multiple measuring knobs in order to make a measurement and is therefore not seen to disclose or suggest this claimed feature. As such, claim 1 is believed to be patentable over German '917.

Claim 31

Similarly to claim 1 discussed above, claim 31 recites a first tread element comprising means that constitute a sensor capable of making a measurement of at least a tangential force in the contact surface of the first tread element during its passage through the contact area, wherein an estimate of a tangential force on the vehicle is obtainable based on the tangential force measured in the first tread element, without a measurement in the second tread element.

As noted above, German '917 requires measurements from multiple measuring knobs in order to make a friction measurement and is therefore not seen to disclose or suggest this claimed feature. As such, claim 31 is believed to be patentable over German '917 for the reasons discussed above with respect to claim 1.

Claim Rejections Under 35 U.S.C. §103

Claim 30 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over German '917. Claims 1, 6, 18-21, 30, and 31 stand rejected as being unpatentable over German '917 in view of U.S. Patent No. 5,964,265 ("Becherer"). Claims 2-4 stand rejected as being unpatentable over German '917 in view of Becherer and U.S. Patent No. 3,364,965 ("Oubridge"), U.S. Patent No. 4,319,620 ("Knill"), or JP 61-263807 ("Japan '807"). Claim 5 stands rejected as being unpatentable over German '917 in view of Becherer and JP 62-6802 ("Japan '802") or U.S. Patent No. 5,445,201 ("Kukimoto"). Lastly, claims 7-17 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Brazil 200002924 ("Brazil") in view of Japan '807, JP 6-171321 ("Japan '321") or JP 8-118918 ("Japan '918"). Applicant respectfully traverses all grounds of rejection.

Rejection of Claim 30 Over German '917

For the reasons stated above, claim 1 of the present invention is believed to be patentable over German '917. Claim 30 depends from claim 1, and for at least the same reasons discussed above for claim 1, claim 30 is also believed to be patentable over German '917.

Rejection of Claims 1, 6, 18-21, 30, and 31 Over German '917 in View of Becherer

Becherer relates to a vehicle tire having a carcass, a belt, a tire tread, and a device for generating data for determining friction between a footprint of the vehicle tire and a road surface. Becherer's device has at least one magnetic sensor connected to an

evaluation device, which is embedded in a lug of a tire tread. The magnetic sensor includes pairs of cooperating magnetic sensor elements.

It is respectfully submitted that Becherer does not remedy the shortcomings of German '917 with respect to the features of Claim 1. First, Becherer does not teach or suggest a first tread element configured to slide and a second tread element configured not to slide, in which the first tread element includes a sensor capable of making a measurement of a tangential force in the contact surface of the first tread element during its passage through the contact area. Nor does Becherer teach or suggest obtaining an estimate of a tangential force on a vehicle based on the tangential force measured in the first tread element, without a measurement in the second tread element.

In the Office Action, it is stated that Becherer teaches that "it is unnecessary to locate sensors in all of the tread elements of a tread." (Office Action at page 7).

However, Becherer states:

A plurality of sensors and magnetic fields is distributed about the circumference of the tire in uniform spacing. The more sensors are provided, the more exact will be the measuring result.

(Becherer at col. 3, lines 12-15). Moreover, when Becherer is considered as a whole as the law requires, it clearly relates to the use of multiple pairs of magnetic sensors to measure friction between a tire and a road surface.

Accordingly, Claim 1 is believed to be patentable over German '917 in view of Becherer.

Independent Claim 31 recites features similar to those discussed above with respect to claim 1 and therefore is also believed to be patentable over the cited references for the reasons discussed above.

Rejection of Claims 2-5

A review of the other art of record, including Oubridge, Knill, and Japan '807, Japan '802, and Kukimoto, has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record.

Claims 2-5 are each dependent from independent claim 1 discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

Rejection of Claims 7-17

Regarding the rejection of claims 7-17 over Brazil 200002924 ("Brazil") in view of Japan '807, JP 6-171321 ("Japan '321") or JP 8-118918 ("Japan '918"), the Examiner has taken the position that Brazil may be applied to these claims, because claims 7-17 are allegedly only entitled to the filing date of the present continuation-in-part application (February 6, 2002), but not the parent application (U.S. Patent Appln. No. 09/636,566, filed August 10, 2000).

Claim 7 is directed to a tire according to claim 1, in which the first tread element, viewed at the surface of the tread, has a central zone surrounded by an encircling zone, the sensor being disposed so as to achieve a measurement in the central zone and being sensitive to at least one tangential force exerted at the surface of the central zone.

Neither Brazil, Japan '807, Japan '321, nor Japan '918 teach or suggest having a sensor disposed so as to achieve a measurement in the central zone and being sensitive to at least one tangential force exerted at the surface of the central zone, as recited in claim 7. Accordingly, Applicants respectfully submit that Brazil, Japan '807, Japan '321, Japan '918, taken individually or in any permissible combination, do not support a *prima facie* case of obviousness.

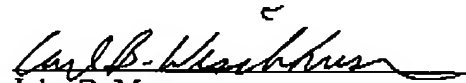
Claims 8-17 are each dependent from independent claim 7 discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

This Amendment After Final Action is believed clearly to place this application in condition for allowance and, therefore, its entry is believed proper under 37 C.F.R. § 1.116. Accordingly, entry of this Amendment, as an earnest effort to advance prosecution and reduce the number of issues, is respectfully requested. Should the Examiner believe that issues remain outstanding, it is respectfully requested that the Examiner contact Applicants' undersigned attorney in an effort to resolve such issues and advance the case to issue.

In view of the foregoing amendments and remarks, favorable reconsideration and allowance of all pending claims is earnestly solicited.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,


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